Tinghui Zhu

Email: darthzhu@gmail.com | Personal Website: darthzhu.github.io | Google Scholar:

Education

Fudan University 2022/09 – present

M.S. in Computer Science. Advisor: Yanghua Xiao Shanghai, China

Fudan University 2018/09 – 2022/06

B.S. in Computer Science. Advisor: Yanghua Xiao Shanghai, China

Publications

* Indicates equal contributions.

1. **Tinghui Zhu**, Qin Liu, Fei Wang, Zhengzhong Tu, Muhao Chen. Unraveling Cross-Modality Knowledge Conflicts in Large Vision-Language Models. *Under Review*, 2024.
2. **Tinghui Zhu***, Kai Zhang*, Jian Xie, Yu Su. Deductive Beam Search: Decoding Deducible Rationale for Chain-of-Thought Reasoning. In *Proceedings of the 1st Conference on Language Modeling* (**COLM**), 2024.
3. Siye Wu*, Jian Xie*, Jiangjie Chen, **Tinghui Zhu**, Kai Zhang, Yanghua Xiao. How Easily do Irrelevant Inputs Skew the Responses of Large Language Models?. In *Proceedings of the 1st Conference on Language Modeling* (**COLM**), 2024.
4. Jiangjie Chen, Xintao Wang, Rui Xu, Siyu Yuan, Yikai Zhang, Wei Shi, Jian Xie, Shuang Li, Ruihan Yang, **Tinghui Zhu**, Aili Chen, Nianqi Li, Lida Chen, Caiyu Hu, Siye Wu, Scott Ren, Ziquan Fu, Yanghua Xiao. From Persona to Personalization: A Survey on Role-Playing Language Agents. Transactions on Machine Learning Research (**TMLR**), 2024.
5. Jian Xie*, Kai Zhang*, Jiangjie Chen, **Tinghui Zhu**, Renze Lou, Yuandong Tian , Yanghua Xiao, Yu Su. TravelPlanner: A Benchmark for Real-World Planning with Language Agents, In *Proceedings of the 42nd International Conference on Machine Learning* (**ICML Spotlight**), 2024.
6. **Tinghui Zhu**, Jingping Liu, Haiyun Jiang, Yanghua Xiao, Zongyu Wang, Rui Xie, Yunsen Xian. Towards Visual Taxonomy Expansion. In *Proceedings of the 32nd ACM Multimedia Conference* (**ACMMM**), 2023.
7. Chao Wang*, **Tinghui Zhu***, Jingping Liu, Yanghua Xiao. SLR:A Million-Scale Comprehensive Crossword Dataset for Simultaneous Learning and Reasoning. **Neurocomputing**, 2023.
8. Lihan Chen, **Tinghui Zhu**, Jingping Liu, Jiaqing Liang, Yanghua Xiao. End-to-end Entity Linking with Hierarchical Reinforcement Learning. In *Proceedings of the 37th Annual AAAI Conference on Artificial Intelligence* (**AAAI**), 2023.

Experiences

University of California, Davis, LUKA Group 2024/04 – present

Research Intern, *Mentor: Muhao Chen*

- Defined the issue of cross-modality parametric knowledge conflicts. Focused on identifying an overlooked knowledge alignment problem in LVLMs.

- Proposed a systematic way of studying cross-modality parametric knowledge conflicts, including designing a pipeline for detection, a contrastive metric for interpretation, and multiple inference interference approaches for mitigation.

The Ohio State University, OSU NLP Group 2023/07 – 2024/02

Research Intern, *Mentor: Yu Su*

- Proposed to integrate step-wise beam search with deductive reasoning to mitigate accumulative errors in LLMs. Proposed a bootstrapping method to synthesize false reasoning steps which simulate errors from LLMs. Conducted experiments on models across a wide range of scales, demonstrating the generalizability of the proposed method. [**COLM 2024**]
- Collaborated to construct *TravelPlanner,* a benchmark for evaluating language agents in tool-use and complex planning within multiple constraints. [**ICML 2024 spotlight**]

Meituan, NLU group 2022/06 – 2023-03

Research Intern, *Mentor: Rui Xie*

- Proposed to enhance conceptual representations with visual features. Adopted prototypical contrastive learning to generate visual hypernyms. Developed the first method for taxonomy expansion using visual features. [**ACMMM 2023**]
- Constructed a pipeline which determines whether hypernymy holds for a given query and a clicked item, allowing autonomous taxonomy expansion from user history.

Fudan University, Knowledge Works Research Laboratory 2022/07 – present

Graduate Researcher, *Advisor: Yanghua Xiao*

- Collaborated to develop a reinforcement learning entity linking approach. Defined entity linking as a sequential decision problem and applied the hierarchical reinforcement learning. [**AAAI 2023**]
- Constructed a large-scale crossword dataset for evaluating ambiguous language understanding and complex reasoning ability that requires the model to generate answers for a given clue. Evaluated various question-answering methods using language models. [**Neurocomputing**]
- Collaborated to analyze how LLMs perform under irrelevant but semantically related information, pointing out that they are easily distracted by this information. Fitted the constructed data distribution with real-world data distribution from a typical retriever. [**COLM 2024**]
- Collaborated on a survey about role-playing language agents, including demographic persona, character persona, and individualized persona. [**TMLR**]

Awards

- **National Scholarship** (top 1%), Fudan University 2023/10

Services

Reviewer for ICDE 2023, KDD 2023, ACL 2023, ACL 2024, COLM 2024, EMNLP 2024, ICLR 2025.